ANTS, THE PROBABLE AGENTS OF THE ONSET OF INFESTATION OF COTTON WITH APHIDS AND COCCIDS

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From the middle of April to the end of May 1956, the plants in an experimental cotton field at the Entomological Field Station, Giza (Cairo), were examined every day. No aphids or coccids were found on them before the 10th of May. But on that day, first-instar nymphs of the cotton aphid, *Aphis gossypii* Glover, and of the coccid *Phenacoccus hirsutus* Green, were found on many of the plants (now about 5 in. high). The field was laid out in sixteen plots containing seven rows of five plants each, the plots being separated by raised banks. In each plot the aphid and coccid nymphs were found on nearly all the outside plants and on some of the next plants in from the ends of the interior rows, but practically none on the middle plants. The two types of nymphs were found on the lower surfaces of leaves or on the stems : singly in most cases, although occasionally one aphid and one coccid were found close against each other in the angle between the mid-rib and a vein of one leaf.

No adult coccids or aphids, and no older nymphs, were found in the course of a thorough search of the cotton and other neighbouring plants; nor had the weather been windy enough to warrant any suspicion that the nymphs might have been blown into the field. From the first day, however, about 95% of the nymphs of both types were busily attended by the garden ants, *Monomorium gracillimum* and *Monomorium atomus* Don. These ants were seen active on the ground between the plots and among the outside plants of the plots, but rarely inside the plots, both before and after the nymphs appeared.

This combination of circumstances made it difficult to suggest any means by which the aphids and coccids could have reached the plants, other than being carried and placed there by the ants. It is known that certain ants do collect the eggs of stem and root aphids and coccids, store them in their nests over the winter, and transport the newly-hatched nymphs to host-plants in the spring (NIXON, 1951).

It was also shown that the coccid *Saissetia zanzibarensis* Williams is dependant on the ant *Oecophylla longinoda* Latr. for its protection and transportation to suitable feeding sites and is rare in its absence (WAY, 1954).

Recent findings (unpublished data) showed that the root aphid *Triphidaphis phaseoli* Theo. on bean roots depended on the ants *Paratrechina jaegerskjoeldi* Mayr and *Plagiolepis pallescens* Forel for its transportation and dissemination from plant to plant and from one crop to another which may also be a supporting evidence.

REFERENCES

NIXON, G.E.J. (1951) : The association of Ants with Aphids and Coccids (Commonwealth Institute of Entomology, London, 36 pages).

WAY, M.J. (1954) : Studies on the association of the Ant *Oecophylla longinoda* (Latr.) [Formicidae] with the scale insect *Saissetia zanzibarensis* Williams [Coccidae] (*Bull. Ent. Res.*, XLV, pp. 113-134).